NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE	HYDROLOGIC SERVICE AREA (HSA) **WFO Jackson, Mississippi**
MONTHLY REPORT OF HYDROLOGIC CONDITIONS	REPORT FOR: MONTH **February** YEAR **2013**
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283	SIGNATURE **Alan E. Gerard, Meteorologist In-Charge** DATE **04/2/2013**

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☐ **An X inside this box indicates that no river flooding occurred within this hydrologic service area.**

Synopsis...

February 2013 was another above normal rainfall month across the vast majority of the Hydrologic Service Area (HSA). Rainfall was below normal across Northwest Mississippi, Southeast Arkansas, and much of Northeast Louisiana. At ASOS sites, rainfall for the month ranged from 1.67 inches below normal at Greenville, MS to 5.11 inches above normal at Hattiesburg, MS. Temperatures were below normal in the north, near normal in central locations, and above normal in the south. At ASOS sites, temperatures ranged from 1.0 degree below normal at Greenwood, MS to near normal in Jackson, MS to 1.7 degrees above normal in Hattiesburg, MS. Temperatures were well above normal during the meteorological winter, December through February. Jackson and Hattiesburg had the 5th warmest on record. Winter rainfall was above normal across the entire area. It was the 2nd wettest on record at Vicksburg/Tallulah, the 3rd wettest at Meridian, and the 4th wettest winter on record at Jackson.

The month began with a cold front moving across the HSA. Weak high pressure moved in and remained in control of the weather through the 4th; however, there were a few light showers reported across our northeastern HSA on the 2nd. On the 5th, a cold front entered the ArkLamiss region and began a slow journey to the coastline by the 7th. Rainfall was light from the 5th to early on the 6th; however, rainfall increased as a low pressure center formed along the front over South Louisiana from late on the 6th into the 7th and pushed eastward. Rainfall amounts ranged from 0.50 to 2.00 inches south of I-20 with lighter amounts north of the interstate. Another cold front pushed across the HSA on the 8th bringing only light isolated showers. High pressure moved in the HSA on the 9th.

By the 10th, high pressure was building to the east as strong southerly flow developed ahead of an approaching frontal system. During the morning hours, a line of severe thunderstorms moved into Southeast Arkansas, Northeast Louisiana, and portions of Central Mississippi downing trees and power lines. Heavy rainfall from 2.00 to 3.50 inches fell in the Jackson Metro area as the cold front began to slow down. This produced flash flooding from late morning to early afternoon across the metro area. Just southeast

of the line of storms, several supercell thunderstorms developed in the more unstable air mass over South Mississippi. Many of the storms exhibited strong rotation on radar. Three tornadoes were reported from the middle to late afternoon of the 10th. An EF-1 was reported in Lawrence County. An EF-2 touched down in Marion and western Lamar counties before lifting. The same storm which produced this tornado continued eastward across northern Lamar County, producing a large EF-4 tornado which touched down west of Oak Grove, MS and tracked through the very populated West Hattiesburg area. The tornado continued into Forrest County, tracking through the cities of Hattiesburg (damaging the University of Southern Mississippi campus) and Petal before ending in Northwest Perry County. Heavy rainfall from 2.00 to 8.00 inches fell across Southeast Mississippi from the afternoon through the evening. Significant flash flooding was reported across portions of Forrest County and southern Jones County. Significant flash flooding was reported in adjacent counties outside of the WFO Jackson area across Southeast Mississippi. By late morning on the 11th, the cold front had finally moved off the coast and became stationary across the coastal waters of the Gulf of Mexico. Heavy rainfall continued across southern portions of the HSA producing an additional 1.00 to 2.50 inches across southern sections of the area. On the morning of the 12th, a low pressure system formed along the front south of the Southeast Texas Coastline. As the low progressed eastward during the day, the stationary front began slowly moving northward into Southeast Louisiana and Southeast Mississippi. The heavy rainfall axis also moved northward to Northeast Louisiana, Southeast Arkansas, and the central and northern portions of the HSA in Mississippi. Additional heavy rainfall occurred across the areas on the 12th with amounts ranging from 0.50 to 2.50 inches. The low finally exited the region by the evening of the 12th. Some light showers continued into the morning hours of the 13th across the south. Rainfall storm totals from the 10th to 13th ranged from 2.00 inches in the northern HSA to near 10.00 inches in Southeast Mississippi. Minor to moderate river flooding was reported along portions of the Pearl River, Big Black River, and Tallahala Creek while only minor flooding occurred along the Chickasawhay River and Bouie Creek. High pressure finally began to filter into the region on the 13th bringing cold temperatures.

High pressure remained in control of the weather through the 14th. A mostly dry cold front pushed through the HSA on the 15th. Only some scattered very light showers were reported across portions of Northeast Louisiana. High pressure built into the region and remained in place through the 17th. The high shifted eastward on the 18th allowing a return of moist air from the Gulf of Mexico. A fast moving cold front moved through the HSA from late on the 18th into the morning of 19th. Rainfall ranged from 0.25 to 1.50 inches across the area. High pressure moved in and remained across the HSA through the 20th.

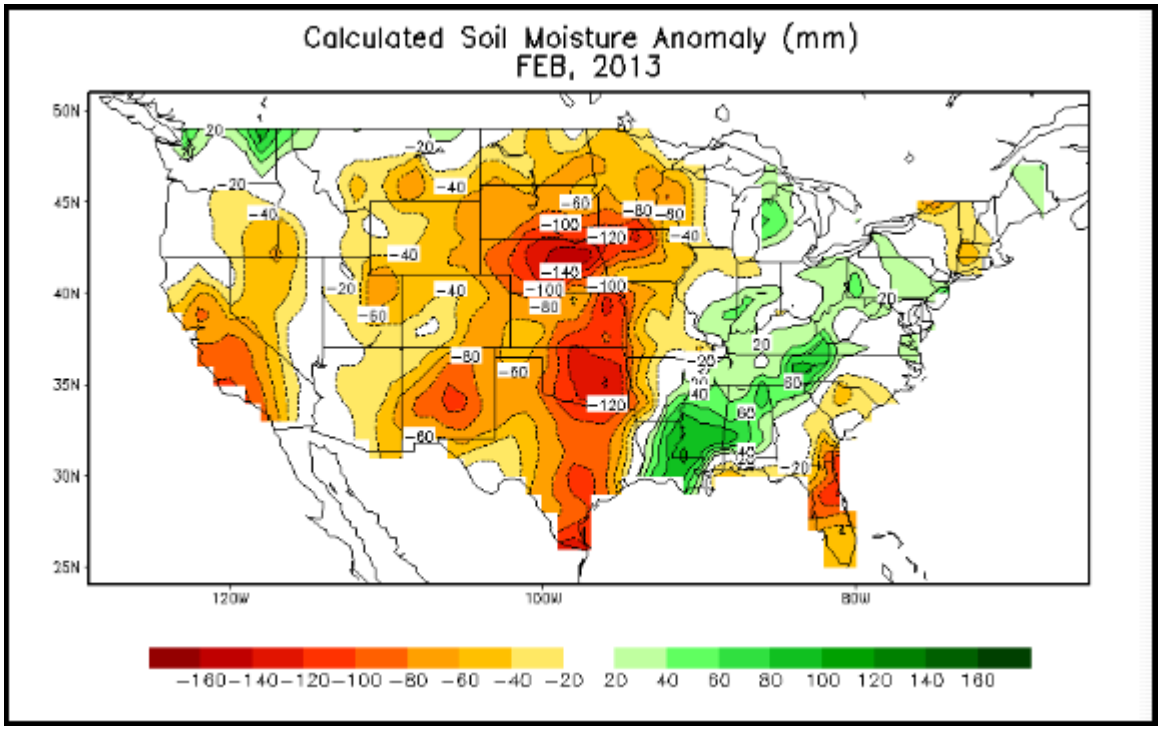
High pressure shifted east on the 21st ahead of a weather system pushing out of the Southwest U.S. Early in the day, a warm front lifted up across the region allowing warm, moist, unstable air to transport into southern sections of the HSA. Three tornadoes were reported in the late afternoon to late evening ahead of a low pressure center with an associated cold front moving across North Louisiana. Tornadoes were rated as follows: Concordia Parish, LA (EF-1), Jefferson Davis County, MS (EF-2), and Covington County, MS (EF-0). The Low pressure center and cold front pushed across the HSA on

the 21st and stalled along the MS Coast by the morning of the 22nd. A secondary cold front moved across the region later in the day on the 22nd. Heaviest rainfall fell from Jefferson and Claiborne counties in Mississippi through the Jackson Metro Area to Kemper County. Rainfall across this region ranged from 1.50 to 4.00 inches producing some flash flooding and some river flooding. Rainfall across the remainder of area ranged from less than 0.50 to near 1.50 inches. High pressure moved into the region on the 23rd finally pushing the stalled front further into the Gulf of Mexico. High remained across the area through the 24th.

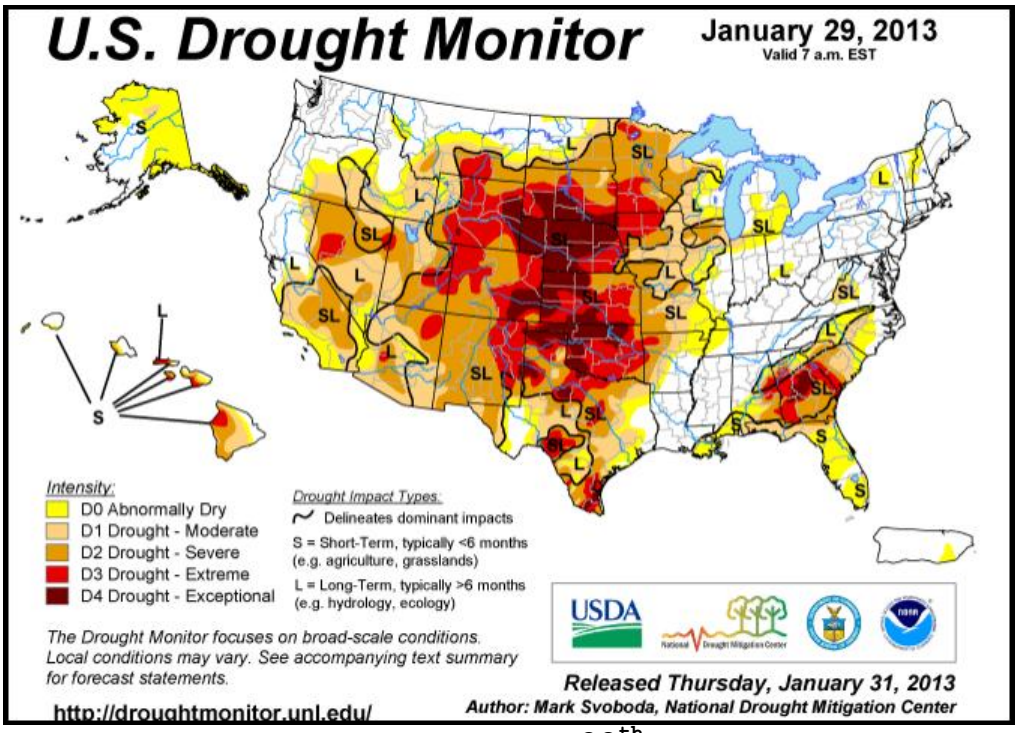
By the evening of the 24th, a very complex system was setting up. An upper level system across the Southwest U.S. began to move eastward. On the morning of the 25th, a warm front was positioned from a low pressure center over South Texas across the entire Gulf Coast Region. Heavy rainfall began falling during the morning across South and Southeast Mississippi. As the day progressed, the surface low over South Texas moved rapidly eastward along the warm front. During this same time period, the upper level system with a closed surface low across West Texas began rapidly moving to the east and northeast. Heavy rainfall developed across most areas northwest of the Natchez Trace Parkway. By late on the 25th, the upper level system and surface low across the southern HSA had exited the HSA. Rainfall totals for South and Southeast Mississippi ranged from 1.50 to 2.50 inches while rainfall northwest of the Trace ranged from 0.50 to 2.00 inches. Rainfall in between these two regions only had 0.25 to 0.50 inches. High pressure moved in from the 26th to the 27th. A dry cold front pushed through the area on the 28th bringing a little colder air to the HSA.

River and Soil Conditions...

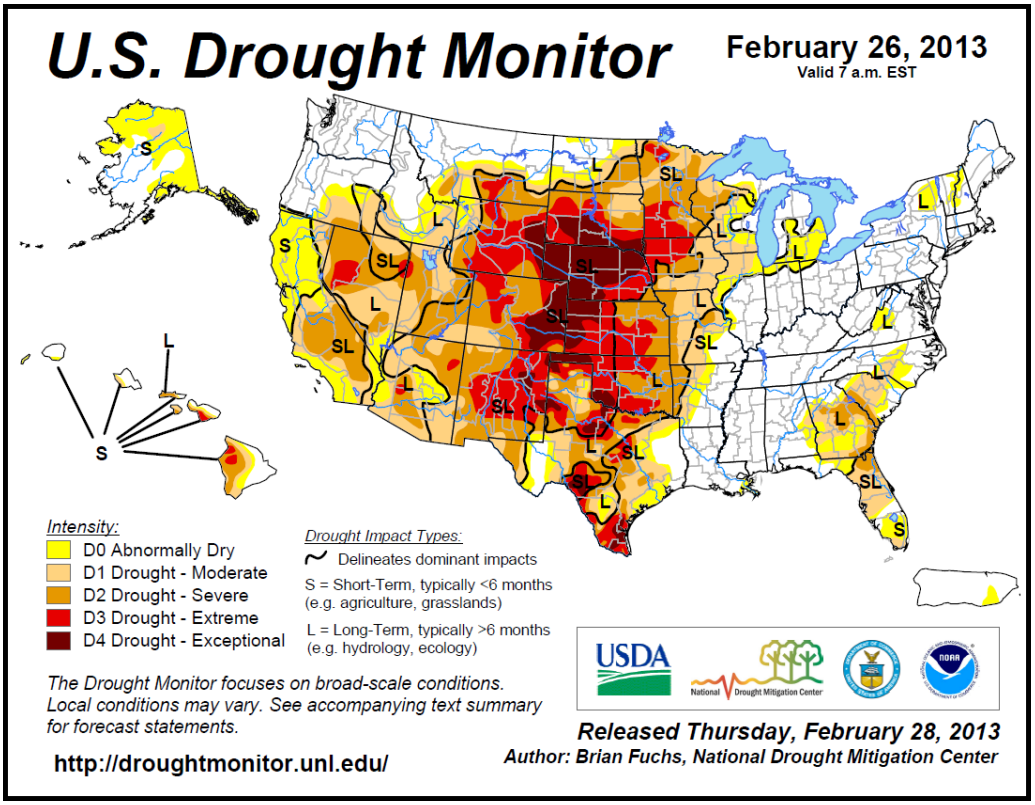
Soil Moisture Map:



Drought Comparison to prior month:



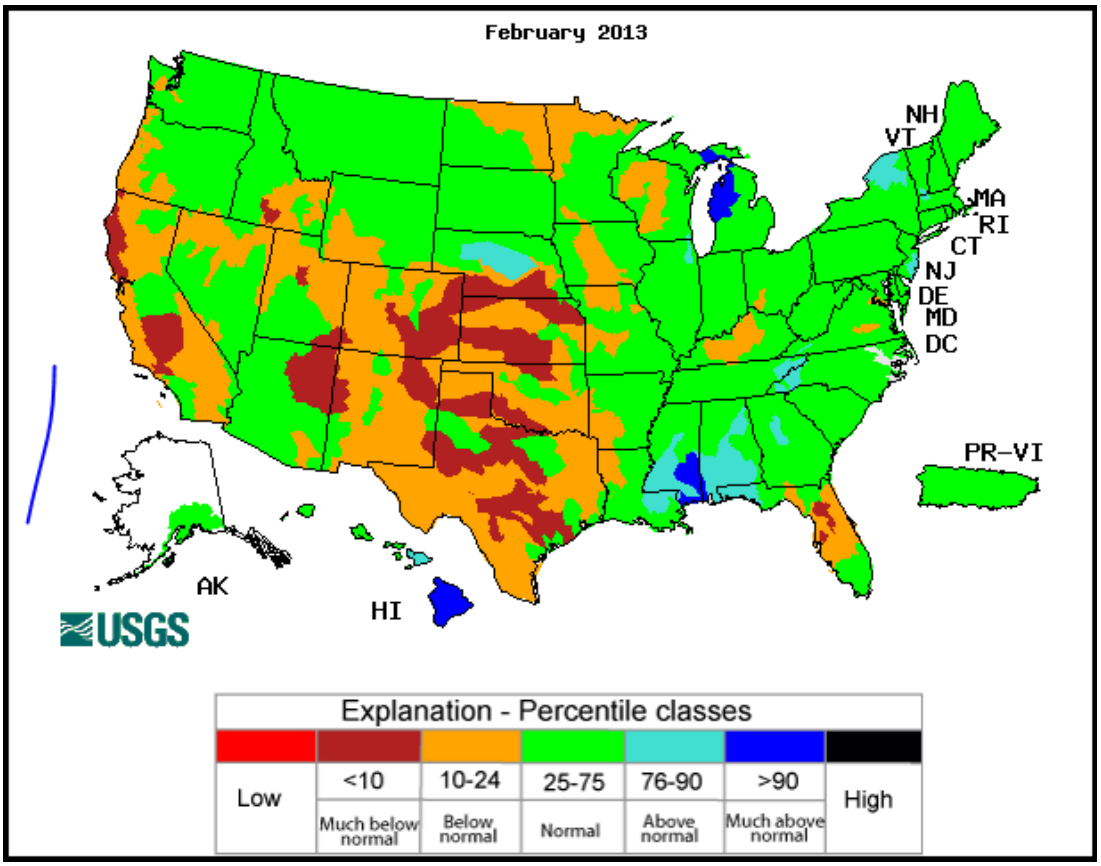
January 28th



February 26th

Streamflow:

The United States Geological Survey's (USGS) February 2013 river streamflow records were compared with all historical February streamflow records. Streamflow ranged from above normal to much above normal across the Hydrologic Service Area.



February 2013 Streamflow

River Conditions and flood potential:

Heavy rainfall from the 10th to 12th of the month brought the most significant river flooding to the region. Moderate flooding occurred along the Pearl River at Monticello, Big Black at Bentonia, and the Tallahala Creek at Laurel. Minor flooding was reported along the remainder of the Pearl River and most of its tributaries and the Big Black River. Minor flooding also occurred along the Chickasawhay River and Bouie Creek in the Pascagoula River System. Another heavy rainfall event on the 21st and the 22nd produced minor to moderate flooding along the Pearl and Big Black River Basins. Much of the Lower Pearl River and Big Black River stayed above flood stage from the middle of the month through the end of the month. The remainder of the HSA had minor to moderate rises but stayed below flood stage.

The Mississippi River saw a series of rises and falls during the month; however, stages from Arkansas City to Natchez were lower at the end of the month than they were at the beginning.

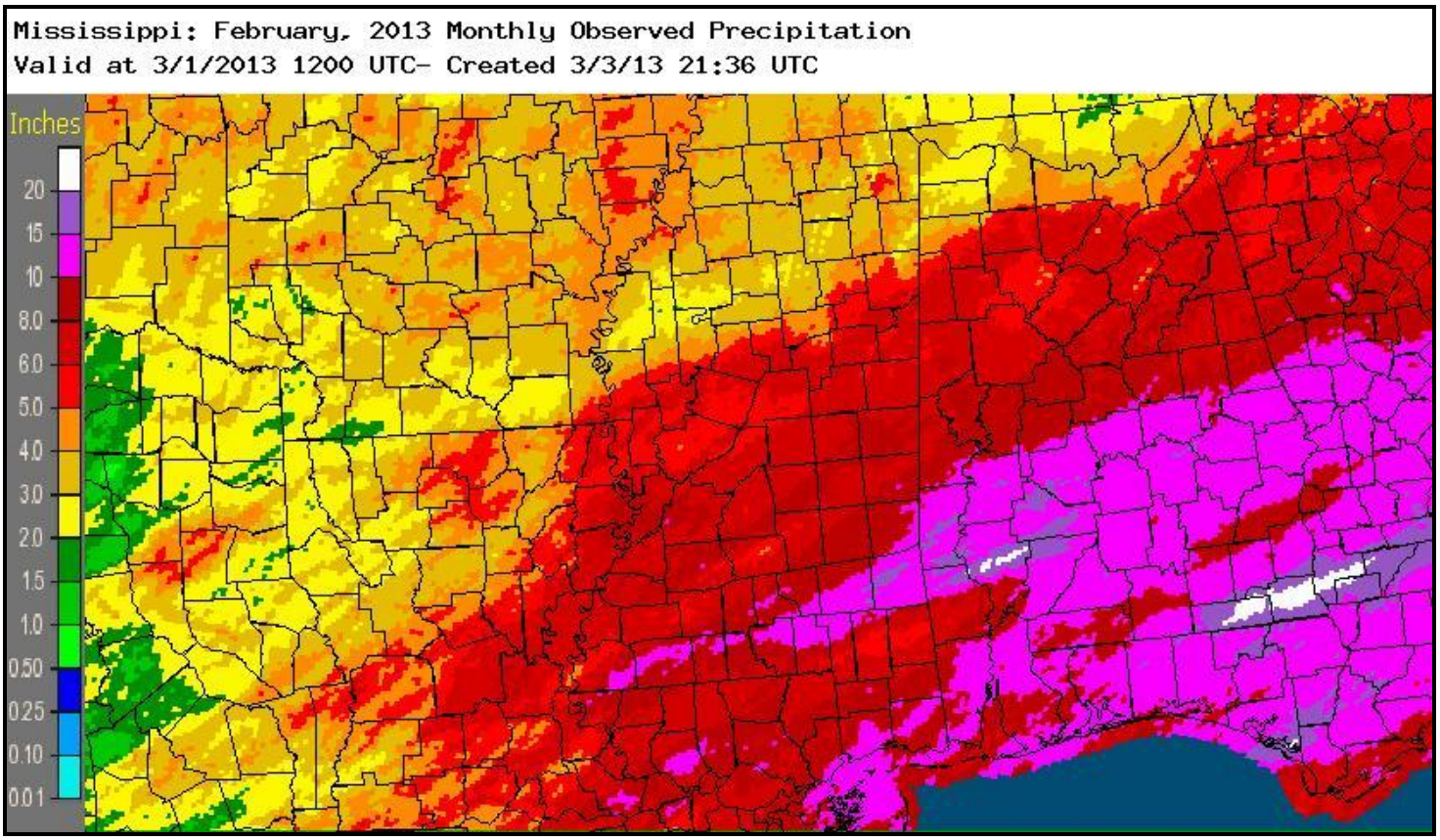
The climatic trends over the next 3 months in temperature should be above normal while rainfall should trend to below normal in Southeast Mississippi with equal chances for either above or below normal rainfall across the remainder of the HSA.

Based on current soil moisture, streamflow, and the 3 month weather outlooks, flood potentials are as follows:

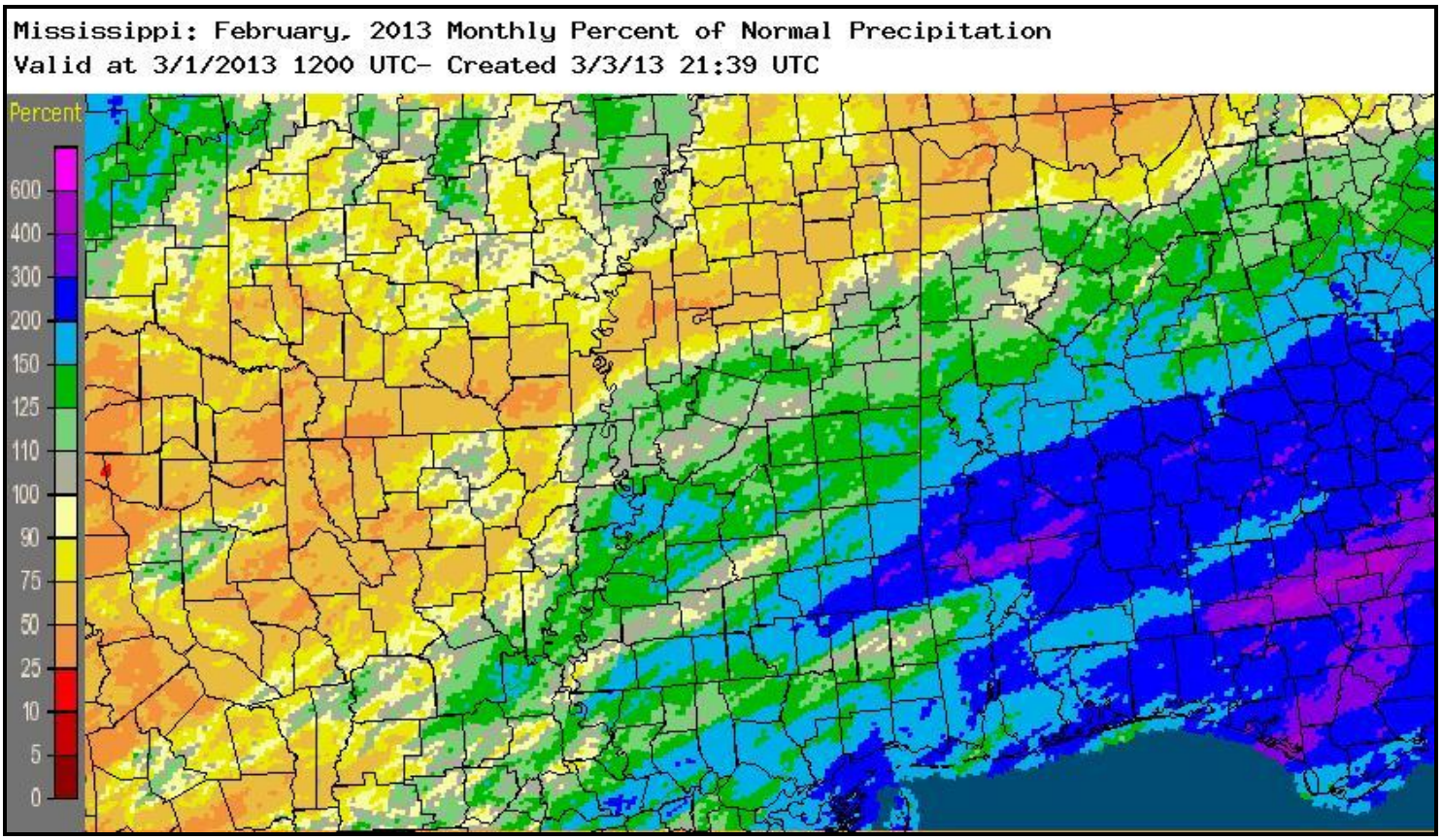
***Pearl River System*:**	**Above Average.**
***Yazoo River System*:**	**Average.**
***Big Black River System*:**	**Above Average.**
***Homochitto River System*:**	**Average.**
***Pascagoula River System*:**	**Above Average.**
***Northeast LA and Southeast AR*:**	**Average.**
***Tombigbee River System*:**	**Average.**
Mississippi River:	**Average.**

Rainfall for the month of February:

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on January 31st until 7 am on February 28th were: 12.87 inches at Sumrall, MS; 12.55 inches at Hattiesburg, MS; 12.08 inches at Prentiss, MS; 12.00 inches at Collins, MS; 11.72 inches at Shubuta, MS; 11.26 inches at Crystal Springs, MS; 11.25 inches at Laurel, MS; 11.21 inches at Hazlehurst, MS; 10.58 inches at Pat Harrison Waterway's Big Creek Water Park, MS; 10.36 inches at Pat Harrison Waterway's Dry Creek Water Park, MS; 10.27 inches at Pat Harrison Waterway's Dunn's Falls Water Park, MS; 10.25 inches at Monticello, MS; and 10.15 inches at Pat Harrison Waterway's Archusa Water Park, MS and Natchez, MS.



February 2013 Rainfall Estimates



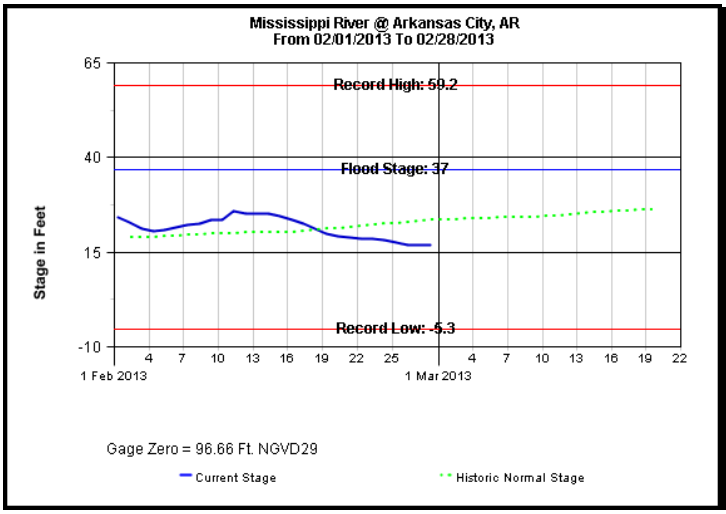
February 2013 Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

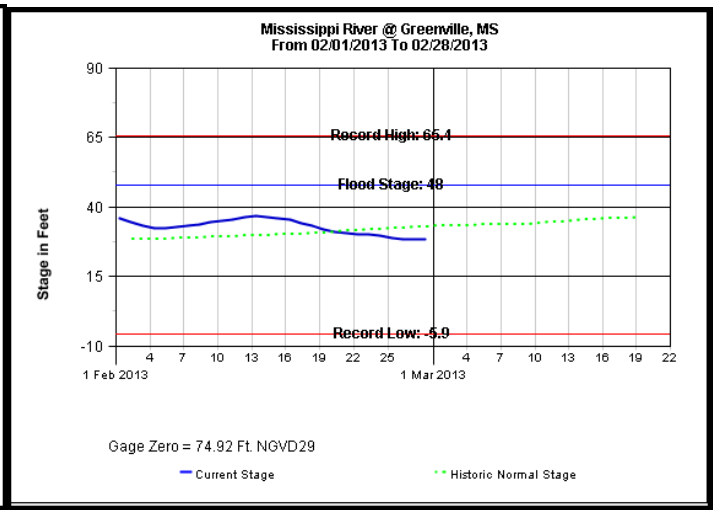
February rainfall for Selected Cities...

City (Airport)	February Rainfall	Departure from normal	2013 Rainfall	2013 Departure from Normal
Jackson, MS	8.86	+4.10	17.44	+7.71
Meridian, MS	9.07	+3.47	18.83	+8.10
Greenwood, MS	3.82	-0.60	12.46	+3.52
Greenville, MS	3.35	-1.67	12.46	+2.47
Hattiesburg, MS	10.50	+5.11	18.43	+7.30
Vicksburg, MS	9.55	+4.28	22.83	+12.49

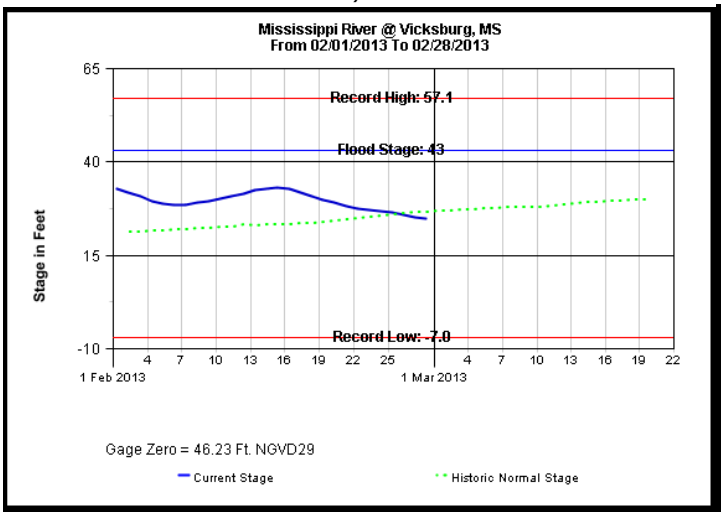
Mississippi River...
Mississippi River Plots for February, 2013
Plots Courtesy of the United States Army Corps of Engineers



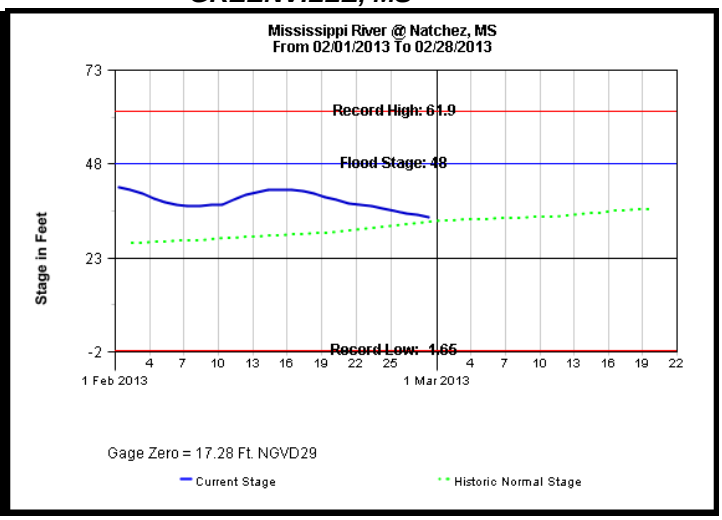
ARKANSAS CITY, AR



GREENVILLE, MS



VICKSBURG, MS



NATCHEZ, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	25.33	02/13/13	16.38	01/28/13
Greenville, MS	48	36.59	02/14/13	27.71	01/28/13
Vicksburg, MS	43	33.31	02/01/13	24.87	02/28/13
Natchez, MS	48	41.74	02/01/13	33.61	02/28/13

Total Flood Warning products issued: 29
Total Flood Statement products issued: 181
Total Flood Advisories MS River : 0
Daily Climate and Ag WX Products (AGO'S) issued: 28
Daily CoCoRaHS Rainfall Products (LCO'S) issued: 28
Daily River and Lake Summary Products (RVD'S) issued: 28

Marty V. Pope
Service Hydrologist &
Latrice Maxie
Assistant Hydrologist/Observing Program Leader (OPL)

Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District